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16. Abstract

The report compares and contrasts the automated PASCO method of pavement evaluation to the manual procedures used by the Iowa Department of Transportation (DOT) to evaluate pavement condition. Iowa DOT's use of IJK and BPR roadmeters and manual crack and patch surveys are compared to PASCO's use of 35-mm photography, artificial lighting and hairline projection, tracking wheels and lasers to measure ride, cracking and patching, rut depths, and roughness. The Iowa DOT method provides a Present Serviceability Index (PSI) value and PASCO provides a Maintenance Control Index (MCI).

Seven sections of Interstate Highway, county roads and city streets, and one shoulder section were tested with different speeds of data collection, surface types and textures, and stop and start conditions. High correlation of results between the two methods in the measurement of roughness (0.93 for the tracking wheel and 0.84 for the laser method) were recorded. Rut depth correlations of 0.61 and cracking of 0.32 are attributed to PASCO's more comprehensive measurement techniques.

A cost analysis of the data provided by both systems indicates that PASCO is capable of providing a comparable result with improved accuracy at a cost of $125-$150 or less per two-lane mile depending on survey mileage. Improved data collection speed, accuracy, and reliability, and a visible record of pavement condition for comparable costs are available.

The PASCO system's ability to provide the data required in the Highway Pavement Distress Identification Manual, the Pavement Condition Rating Guide, and the Strategic Highway Research Program Long Term Pavement Performance (LTPP) Studies, is also outlined in the report.

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